

REMARKS

Claims 1-26 are pending. Claim 19 is amended. Claim 27 is added.

Applicant appreciates the courtesy extended by Examiner Mulpuri during a telephone interview July 13, 2005 with Applicant's Agent Julius Fister. The remarks below are in accord with those discussed during the interview.

Claims 1-25 were rejected under 35 U.S.C. § 102(a) as being anticipated by admitted prior art at paragraphs 0002 to 0014 of the present application. The Office Action states:

[a]dmittid prior art teaches sawing technique to form trench recess by saw blade "80" having trapezoidal cress section (see US6, 229,160 to Krames fi.2, f ig.7, fig. 10 and col. 4-col.5 for detailed information, which is discloses as admitted prior art.

. . .

Admitted prior art, in Krames, fig. 7 the truncated cone shaped cavity is interpreted as void, which is recited trench recess in the window (substrate). Since the instant claims are not limited to void as trench recess formed is not limited to only within the window (substrate) as shown in fig. 1A in instant invention).

Before addressing the rejection, Applicant notes that paragraphs 0002 – 0014 of the present application refer to U.S. patent no. 6,229,160 to Krames ("Krames") but do not admit Krames as prior art. We reserve the right to show an invention date earlier than the filing date of Krames.

Turning to the rejection, claim 1 refers to a radiation-emitting semiconductor component having a radiation-transmissive window with a first main surface adjoining a multilayer structure and a second main surface opposite said first main surface. The second main surface has at least one void selected from the group consisting of a trench recess and a pit recess formed therein for increasing a coupling-out of radiation from the window. The art cited by the Examiner does not disclose or suggest such a structure.

As seen in FIG. 9 of the present application, a known device has a radiation transmissive SiC substrate 19 on a GaN-based multilayer structure 20. Substrate 19 includes an outer surface 25 that has no void. Accordingly, the device of FIG. 9 does not disclose or suggest the claimed window.

Krames describes a light emitting device (LED) having an active region of epitaxial layers 10.¹ Krames' LED includes a top window layer 12 and a bottom window layer 13.² Top window layer 12 has a surface attached to epitaxial layers 10 and a top surface 17 opposite the surface attached to epitaxial layers 10.³ Top surface 17 has no void. Bottom window layer 13 has a surface attached to epitaxial layers 10 and a surface to which an electrical contact 15 is attached.⁴ The surface with electrical contact 15 is opposite the surface attached to epitaxial layers 10 and has no void.

The Office Action refers to a truncated cone shaped cavity in FIG. 7 of Krames. This cavity does not disclose or suggest the claimed void. No surface of a window seen in FIG. 7 has a void as claimed. Instead, the cavity merely indicates material that is wasted when dicing a wafer to form multiple devices.⁵

Accordingly, as was discussed during the interview, Krames does not disclose or suggest the claimed window including a second main surface having a void.

Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Admitted prior art in combination with U.S. patent no. 6,239,033 to Kawai et al. ("Kawai").

Claim 26 depends from claim 19, which itself depends from claim 1. Claim 26 recites forming the at least one recess in the second main surface of the window by a laser ablation process. In the Office Action, Kawai was relied upon to provide the step of forming a recess by laser ablation. As discussed during the interview, the claimed window with a recess is simply not present in Krames. The Examiner then proposed that Kawai could be relied upon to provide the missing recess. Applicant disagrees.

Kawai describes devices understood to be edge-emitting lasers (FIGS. 1 and 14).⁶ Kawai provides no motivation to modify the window of Krames with a recess at least because Kawai's devices emit radiation through a cavity edge rather than a window.⁷ For example, the device of

¹ Krames, col. 3, line 66 to col. 5, line 2 and FIG. 2.

² Id., col. 4, lines 17-28 and FIG. 2.

³ Id.

⁴ Id., col. 4, lines 33-36.

⁵ Id., col. 6, line 47 to col. 7, line 24.

⁶ Kawai, col. 13, lines 48-52.

⁷ Id.

Kawai FIG. 14 is understood to emit light through an edge of an active layer 55 not through a window layer.⁸

Moreover, no device of Kawai has window with a recess as presently claimed. For example, the Kawai FIG. 14 device has a via hole 61 in a sapphire substrate to permit ohmic contact between an electrode layer 62 and a GaN layer 53. Sapphire substrate 61 is not the presently claimed window at least because substrate 61 has no second main surface opposite a first main surface with the second main surface having a recess. Accordingly, no combination of Krames and Kawai discloses or suggests the window of the component as set forth in claim 1. Dependent claims 2-26 are submitted to be patentable for at least the same reason.


In view of the foregoing, Applicant believes the rejections have been overcome.

Enclosed is a \$200 check for the independent claim fee and a \$120 check for the Petition for One-Month Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050, referencing 12406-118US1.

Respectfully submitted,

Date: _____

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⁸ Id., col. 12, lines 44-64.